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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------|
| 10/700,359 | 11/04/2003 | Vijayen S. Veerasamy | 3691-581 | 5120 |
| 23117 | 7590 | 02/04/2008 | | |
| NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 | | | EXAMINER TUROCY, DAVID P | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1792 | |
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| | | | 02/04/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/700,359 | Applicant(s) VEERASAMY, VIJAYEN S. | |
| | Examiner David Turocy | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 and 49-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 49-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/29/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 11/27/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 2007/0042186; 2005/0191494 and 2006/0057294 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-32 and 49-55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 7150849. Although the conflicting claims are not identical, they

are not patentably distinct from each other because the claims of the instant application fully encompass the claims of US Patent 7150849 and therefore the claims of US Patent 7150849 anticipate the claims of the instant invention.

4. Claims 1, 30-32 and 49-55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 40-44 of copending Application No. 11/586693. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application fully encompass the claims of Application No. 11/586693 and therefore the claims of Application No. 11/586693 anticipate the claims of the instant invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on 10/29/07 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 30-32 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the deposition of a DLC layer on a ZrN layer, does not reasonably provide enablement for all metal nitride layers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The nature of the invention involves application of a DLC comprising layer onto a metal nitride layer, selected from a seemingly infinite number of possible metal nitride layer, and then burning off the carbon layer to convert the metal nitride to a metal oxide. The state of the prior art is silent to various metal nitride layers capable of being utilized in such a manner and while the skill of one ordinary in the art is relatively high, the claims required a chemical reactions and conversions of coatings which is a highly exact science with little predictability. Additionally, while the specification clearly describes with sufficient specificity the application of the species of DLC carbon, followed by combustion, results in the proper conversion of ZrN to ZrO, the specification fails to include any working examples or direction as to a representative number of species of the seemingly infinite number of possible metal nitride comprising layers, that would result in the proper conversion without undue experimentation. This undue experimentation would encompass determining which metal nitride layers successfully results in the conversion to metal oxide as required by the present claims. See *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

8. Claims 49-55 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the deposition of a DLC layer on a ZrN layer, does not reasonably provide enablement for all layers “phase-transformed during heat treatment”. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The nature of the invention involves application of DLC on a “phase-transformed during heat treatment” selected from a seemingly infinite number of layers, and then burning off the carbon layer to transform the phase transformed layer to a new phase. The state of the prior art is silent to various “phase-transformed during heat treatment” capable of being utilized in such a manner and while the skill of one ordinary in the art is relatively high, the claims required a chemical reactions and conversions of coatings which is a highly exact science with little predictability. Additionally, while the specification clearly describes with sufficient specificity the application of the species of DLC carbon, followed by combustion, results in the proper conversion of ZrN to ZrO, the specification fails to include any working examples or direction as to a representative number of species of the seemingly infinite number of possible layers of “phase-transformed during heat treatment”, that would result in the proper conversion without undue experimentation. This undue experimentation would encompass determining which “phase-transformed during heat treatment” comprising layers successfully transform into a new phase upon heat treatment with a DLC layer as required by the present claims. See *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792

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Patent Examiner
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